



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,251	02/19/2004	Richard E. Pingree Jr.	ATI-0022	2250
23413	7590	07/10/2007		
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			EXAMINER AKRAM, IMRAN	
			ART UNIT 1709	PAPER NUMBER
			MAIL DATE 07/10/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/708,251	Applicant(s) PINGREE ET AL.	
	Examiner Imran Akram	Art Unit 1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 and 27-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/19/04, 2/20/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group II in the reply filed on 6/25/07 is acknowledged. The traversal is on the ground(s) that there is no undue or serious burden on the examiner. This is not found persuasive because examination of the withdrawn claims would entail additional searching for the method claims in different classification and art. This is a serious burden on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 14 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Turner (US 5,939,886).

Regarding claim 14, Turner discloses a material detection system, comprising: a flow path configured to contain a medium of interest in which solid material is to be detected; an electromagnetic energy source for exciting said medium of interest; and an impedance measuring device for measuring an impedance value of an electromagnetic circuit (column 3, lines 21-40).

Regarding claim 16, Turner discloses an electromagnetic energy source configured to excite said medium of interest into plasma (column 3, lines 21-40).

Regarding claim 17, Turner discloses the material detection system of claim 14, wherein said impedance measuring device is configured to determine an impedance magnitude value and an impedance phase value (column 9, lines 53-59).

Regarding claim 18, Turner discloses a mechanism for determining variations of said impedance magnitude and phase values over time (column 5, lines 61-66).

3. Claims 19, 22, 23, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Tretola (US 4,207,137).

Regarding claim 19, Tretola discloses a plasma based semiconductor material removal system, comprising: an upstream electromagnetic energy source **19** configured to cause excitation of an input gas into a plasma so as to produce a reactive species (column 1, lines 20-31); a mechanism for uniformly conveying said reactive species to a surface of a workpiece having photoresist material formed thereupon (column 1, lines 20-31); a mechanism for heating said workpiece so as to enhance the reaction rate of said photoresist material and said reactive species (column 3, lines 40-50); a downstream electromagnetic energy source **14** for exciting an exhaust gas downstream of said workpiece; and an impedance measuring device **17** for measuring an impedance value of an electromagnetic circuit, said electromagnetic circuit including said exhaust gas therein.

Art Unit: 1709

Regarding claims 22 and 23, Tretola discloses a mechanism for determining variations of said impedance magnitude and phase values over time (column 4, lines 27-48).

Regarding claim 26, Tretola discloses an impedance-measuring device configured for facilitating endpoint detection of removal of said photoresist material (see abstract).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

Art Unit: 1709

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Turner.

8. Turner discloses a radio frequency circuit, but not a microwave circuit. Turner does, however, disclose the use of microwave circuits in the art (column 1, lines 21 to 30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a microwave circuit in conjunction with the RF circuit as both are well known and differ only by frequency. Turner discloses the use of multiple circuits and either could be made microwave instead of RF depending on the frequency desired.

9. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tretola as applied to claim 19 above, and further in view of Turner.

10. Regarding claims 20 and 21, Tretola discloses a radio frequency circuit, but not a microwave circuit. Turner does, however, disclose the use of microwave circuits in the art (column 1, lines 21 to 30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a microwave circuit in conjunction with the RF circuit as both are well known and differ only by frequency. Turner discloses the use of multiple circuits and either could be made microwave instead of RF depending on the frequency desired.

11. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tretola.

12. Tretola discloses the use of a power level of 100 watts (column 7, lines 25-29). Tretola does not, however, disclose the use of a power level of 300 watts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to increase the power level of the energy source if more power was necessary to excite the particular gas being used.

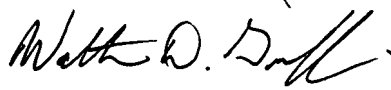
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Imran Akram whose telephone number is 571-270-3241. The examiner can normally be reached on 8-6 Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 1709

IA

A handwritten signature in black ink, appearing to read "Walter D. Griffin". The signature is fluid and cursive, with a prominent initial "W" and a long, sweeping underline.

WALTER D. GRIFFIN
SUPERVISORY PATENT EXAMINER